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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,475	08/29/2001	Laurent Palanchon	1200.518	5342

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EXAMINER

FLANIGAN, ALLEN J

ART UNIT	PAPER NUMBER
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3743

8

DATE MAILED: 06/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,475

Applicant(s)

PALANCHON, LAURENT

Examiner

Allen J. Flanigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 8-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claims 8-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Claims 1, 4, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "especially" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. In other words, it is not clear whether an evaporator of broad utility is claimed, or one specifically intended and sized for passenger compartment installation. See MPEP § 2173.05(d).

Regarding claim 4, the term "thickness" is misdescriptive of the dimension referred to, which is the internal passage height. The term "thickness" implies the presence of material, not the absence of material such as in a fluid passage (*cf* claims 3, 6).

Regarding claim 16, there is no antecedent basis for "the number of passes". Claim 1 does not limit the claimed device to having plural passes.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al.

The term “evaporator” as used in claim 1 is considered to be a statement of intended use, which at best requires the claimed device be capable of such use. Clearly, the heat exchanger of Yamamoto et al. is capable of use as a phase change heat exchanger. The actual structure recited in claim 1 is fully disclosed in Yamamoto et al.; flat tubes separated by corrugated fins, joined at their ends to header tanks, with the specific dimensions claimed also being met by Yamamoto et al. (specific embodiments disclose values of 27 mm and 4.5 mm for the variables labeled “l” and “d” in the claims). Likewise the tube thickness of claim 2 (dimension “B” in Yamamoto et al.). Note lines 34-36 of column 3 of Yamamoto et al. in regard to claim 3, and note that by subtracting double this thickness (0.4mm) from dimension B, the resulting value (1mm in example 1) falls within the range claimed in claim 4.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamamoto et al.

Note lines 39-41 of column 3 in regard to claim 6. Anticipation exists if a single value within the claimed range is taught in the prior art, and the limiting value of a disclosed range is deemed to be a specifically taught value. ***Ex parte Lee*, 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993)**. Even assuming Yamamoto et al. does not anticipate the claim, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to optimize the fin thickness of the claimed device to one or more values common to the disclosed range of Yamamoto et al. and claim 6. The conflicting objectives of fin thickness are well known in the art (thinner fins reduce weight and pressure drop across the core, but reduce structural rigidity and robustness), and to select a value balancing these objectives for a given application would have been obvious to one of ordinary skill in the art.

Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto et al. in view of Yamamoto et al.

Okamoto et al. show a stamped plate evaporator exchanger using corrugated fins. They specifically teach the optimization of fin pitch to enhance heat transfer efficiency. Obviously, teachings regarding air-side heat transfer efficiency and pressure drop optimization will be applicable to heat exchangers regardless of what fluids flow therein, refrigerant or coolant. Thus, the teachings of Yamamoto et al. would be seen as directly applicable to the heat exchanger design of Okamoto et al., since both employ parallel tubes separated by corrugated, louvered fins exchanging heat with air flowing thereover. It would have been obvious to one of ordinary skill in the art at the time the instant invention was made to apply the teachings of Yamamoto et al. to the tubes and fins of Okamoto et al. to optimize air-side performance of the heat exchanger.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references show various heat exchanger designs with optimized fin and/or tube dimensions.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone

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number is (703) 308-1015. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on (703) 308-0101. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7764 for regular communications and (703) 305-3463 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.


Allen J. Flanigan
Primary Examiner
Art Unit 3743

AJF
June 10, 2003